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10/812,576	03/30/2004	Tsutomu Honda	15162/05740	3679

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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/812,576	HONDA, TSUTOMU
	Examiner	**Art Unit**
	Albert H. Cutler	2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. This office action is responsive to application 10/812,576 filed on March 30, 2004. Claims 1-19 are pending in the application and have been examined by the examiner.

Information Disclosure Statement

2. The Information Disclosure Statement (IDS) mailed on March 30, 2004 was received and has been considered by the examiner.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 4, 6, and 7, 13, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al.(US 7,209,175) in view of Nonaka(US 2003/0156216).

Consider claim 1, Kurokawa et al. teach:

An image capturing apparatus(figures 13, 42-45) comprising:

a taking lens system(11, 12, 13, 14) capable of focus adjustment(column 24, lines 31-64, column 30, line 52 through column 31, line 11);

a driver(5 and 6, figure 13) that drives the taking lens system for focus control(column 26, lines 42-47, column 27, lines 5-27);

an input portion("button, a slide switch, and so on", column 52, lines 4-17);

a detector(82, figure 13) that detects a current position of the taking lens system(column 30, lines 52-67); and

a controller(4, figure 13) that determines whether the current position of the taking lens system is within an in-focus permissible range(The controller(4) selects a focusing method by analyzing data transmitted from the various other camera devices(column 30, line 52 through column 31, line 11). See figure 42. The camera obtains two focusing estimated values and then performs focusing according to those values. The process of figure 42 includes a step(252, column 49, lines 38-43) in which it is decided whether or not the imaging system is currently in focus. Kurokawa et al. disclose in figure 51 that an in-focus position can correspond to a permissible range(Δv

and Δd, figure 51, column 50, lines 39-43).), and terminates the focusing process without driving of the taking lens system when the current position of the taking lens system is within said in-focus permissible range(See column 49, lines 38-43, figure 42, step 252. If the imaging system is found to be in a focused position("YES", figure 42, step 252), then the lens system is not driven and the focusing process is terminated. If the imaging system is not in a focused position, a focusing method is selected(steps 253-255) and the motor is driven(step 256), moving the lens system, column 49, line 26 through column 50, line 8. A focused position corresponds to an in-focus permissible range, figure 51.).

Kurokawa et al. teach that the input portion receives a start instruction(column 52, lines 4-17). However, Kurokawa et al. do not explicitly teach that the start instruction is in the form of a shooting start instruction, that the focusing method of figure 42 is driven in response to the shooting start instruction, or that the camera starts shooting when the process of figure 42 terminates.

Nonaka is similar to Kurokawa et al. in that Nonaka teaches of an image capturing apparatus(see figure 1) with a focusing device(lens, 2, and lens driver, 7) and a focus detecting circuit(5) to determine whether or not camera is in an in-focus state(paragraphs 0033-0036). Nonaka also similarly teaches that focus device is activated via an input device(paragraphs 0034-0036).

However, in addition to the teachings of Kurokawa et al., Nonaka teaches(see figure 4, paragraphs 0045-0058) that the start instruction is in the form of a shooting start instruction(S11, figure 4), that the focusing method is driven in response to the

shooting start instruction(S14, figure 4), and that the camera starts shooting when the focusing process terminates(S18, figure 4).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the start instruction given by the input portion as taught by Kurokawa et al. correspond to a shooting start instruction as taught by Nonaka for the benefit that focus control can be performed only at the time of shooting, and thus time is saved and power consumption is reduced by not having to perform repeat focusing operations(Nonaka, paragraphs 0007 and 0055).

Consider claim 4, and as applied to claim 1 above, Kurokawa et al. further teach:

A switching member(71, figures 15-17, column 31, line 62 through column 32, line 14) that switches a plurality of submodes in a shooting mode(The object dimension setting device(i.e. switching member) switches between a plurality of submodes via a knob(71a).); and

wherein said controller(4) determines whether the current position of the taking lens system is within an in-focus permissible range(figure 51) when a predetermined submode in said shooting mode is selected by said switching member(The submodes determine the dimension of the object to be focused on, and thus determine whether the current position of the taking lens system is within an in-focus permissible range when one submode(i.e. one dimension) is chosen as compared to when another submode(i.e. a different dimension) is chosen. In the third embodiment(column 33, line 26 through column 35, line 26), an operator switches submodes to set the dimension of the object

to be focused on. This dimension is then compared to a real dimension, as measured by and object dimension calculating device(72), and if a match is found then the lens system is focused on that object. Different modes can be set by changing the dimension setting device to different dimensions, such as that of a human being, column 34, lines 11-27.).

Consider claim 6, and as applied to claim 1 above, Kurokawa et al. further teach:

A measuring portion(86, figure 28) that measures a subject distance from the image capturing apparatus to the subject(column 38, line 63 through column 39, line 12); and

wherein said controller(4) determines whether the current position of the taking lens system is within an in-focus permissible range(figure 51) based upon the subject distance(column 38, line 63 through column 39, line 12).

Consider claim 7, and as applied to claim 1 above, Kurokawa et al. further teach:

A setting portion(71, figures 15-17) that sets a subject distance from the image capturing apparatus to the subject(The setting portion(71) sets the dimension of the object to be focused on, column 31, line 62 through column 32, line 14. By setting the dimension, the setting portion also sets the subject distance, because the focusing portion will then perform focusing on that subject at that distance.); and

wherein said controller determines whether the current position of the taking lens system is within an in-focus permissible range based upon the subject distance set by

said setting portion(The in-focus range(figure 51) is determined based on the dimension of the object to be focused on, which is set by the setting portion(71), column 31, line 62 through column 32, line 14. In the third embodiment(column 33, line 26 through column 35, line 26), an operator switches submodes to set the dimension of the object to be focused on. This dimension is then compared to a real dimension, as measured by and object dimension calculating device(72), and if a match is found then the lens system is focused on the object at that distance. Different modes can be set by changing the dimension setting device to different dimensions, such as that of a human being, column 34, lines 11-27.).

Consider claim 13, and as applied to claim 1 above, Kurokawa et al. further teach said controller(4) drives a focus lens(11) of the taking lens until the current position of the taking lens system is within said in-focus permissible range(column 26, lines 42-47, column 27, lines 5-27).

However, Kurokawa et al. do not explicitly teach that the controller starts shooting when in the in-focus permissible range.

Nonaka teaches that the controller starts shooting when in the in-focus permissible range(see figure 4, claim 1 rationale).

Consider claim 14, and as applied to claim 1 above, Kurokawa et al. further teach said controller(4) drives a zoom lens(12) of the taking lens until the current position of the taking lens system is within said in-focus permissible range(See figure 42. Once an

in-focus condition is detected("YES", step 252), the focusing process is terminated. Kurokawa et al. teach that the position of the zoom lens can also be referred to in order to determine an in-focus condition, column 30, line 52 through column 31, line 35. Therefore, the driving of the zoom lens can take the focusing position in and out of the in-focus permissible range.).

However, Kurokawa et al. do not explicitly teach that the controller start shooting when in the in-focus permissible range.

Nonaka teaches that the controller starts shooting when in the in-focus permissible range(see figure 4, claim 1 rationale).

Consider claim 16, Kurokawa et al. teach:

A method for focusing an image(figure 42), said method comprising the steps of:

driving a taking lens system for focus control(column 26, lines 42-47, column 27, lines 5-27);

accepting a start instruction(column 52, lines 4-17);

detecting a current position of the taking lens system(column 30, lines 52-67);

determining whether the current position of the taking lens system is within an in-focus permissible range in response to the start instruction(The controller(4) selects a focusing method by analyzing data transmitted from the various other camera devices(column 30, line 52 through column 31, line 11). See figure 42. The camera obtains two focusing estimated values and then performs focusing according to those values. The process of figure 42 includes a step(252, column 49, lines 38-43) in which

it is decided whether or not the imaging system is currently in focus. Kurokawa et al. disclose in figure 51 that an in-focus position can correspond to a permissible range(Δv and Δd, figure 51, column 50, lines 39-43).); and

terminating the focusing process without driving of the taking lens system when the current position of the taking lens system is within said in-focus permissible range(See column 49, lines 38-43, figure 42, step 252. If the imaging system is found to be in a focused position("YES", figure 42, step 252), then the lens system is not driven and the focusing process is terminated. If the imaging system is not in a focused position, a focusing method is selected(steps 253-255) and the motor is driven(step 256), moving the lens system, column 49, line 26 through column 50, line 8. A focused position corresponds to an in-focus permissible range, figure 51.).

Kurokawa et al. teach that the input portion receives a start instruction(column 52, lines 4-17). However, Kurokawa et al. do not explicitly teach that the start instruction is in the form of a shooting start instruction, that the focusing method of figure 42 is driven in response to the shooting start instruction, or that the camera starts shooting when the process of figure 42 terminates.

Nonaka is similar to Kurokawa et al. in that Nonaka teaches of an image capturing apparatus(see figure 1) with a focusing device(lens, 2, and lens driver, 7) and a focus detecting circuit(5) to determine whether or not camera is in an in-focus state(paragraphs 0033-0036). Nonaka also similarly teaches that focus device is activated via an input device(paragraphs 0034-0036).

However, in addition to the teachings of Kurokawa et al., Nonaka teaches(see figure 4, paragraphs 0045-0058) that the start instruction is in the form of a shooting start instruction(S11, figure 4), that the focusing method is driven in response to the shooting start instruction(S14, figure 4), and that the camera starts shooting when the focusing process terminates(S18, figure 4).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the start instruction given by the input portion as taught by Kurokawa et al. correspond to a shooting start instruction as taught by Nonaka for the benefit that focus control can be performed only at the time of shooting, and thus time is saved and power consumption is reduced by not having to perform repeat focusing operations(Nonaka, paragraphs 0007 and 0055).

7. Claims 2 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al. in view of Nonaka as applied to claims 1 and 16 above, and further in view of Kobayashi(US 6,094,223).

Consider claim 2, and as applied to claim 1 above, Kurokawa et al. teach of an in-focus permissible range(see figure 51, claim 1 rationale). However, the combination of Kurokawa et al. and Nonaka does not explicitly teach that the in-focus permissible range is a range where the imaging point of the subject by the lens taking system is within a depth of focus.

Kobayashi is similar to Kurokawa et al. in that Kobayashi teaches of an image capturing apparatus(see figure 1) with a focusing device(lens, 2, and lens driver, 7) and a focus detecting circuit(10) to determine whether or not camera is in an in-focus state(column 4, line 36 through column 5, line 28).

However, in addition to the combined teachings of Kurokawa et al. and Nonaka, Kobayashi teaches that an in-focus permissible range is a range where the imaging point of the subject by the lens taking system is within a depth of focus(see figure 9, column 10, lines 39-54).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the in-focus permissible range as taught by Kurokawa et al. be a range where the imaging point of the subject by the lens taking system is within a depth of focus as taught by Kobayashi in order to prevent false in-focus determination as a result of using contrast values alone(Kobayashi column 10, lines 39-54).

Consider claim 17, and as applied to claim 16 above, Kurokawa et al. teach of an in-focus permissible range(see figure 51, claim 1 rationale). However, the combination of Kurokawa et al. and Nonaka does not explicitly teach that the in-focus permissible range is a range where the imaging point of the subject by the lens taking system is within a depth of focus.

Kobayashi is similar to Kurokawa et al. in that Kobayashi teaches of an image capturing apparatus(see figure 1) with a focusing device(lens, 2, and lens driver, 7) and

a focus detecting circuit(10) to determine whether or not camera is in an in-focus state(column 4, line 36 through column 5, line 28).

However, in addition to the combined teachings of Kurokawa et al. and Nonaka, Kobayashi teaches that an in-focus permissible range is a range where the imaging point of the subject by the lens taking system is within a depth of focus(see figure 9, column 10, lines 39-54).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the in-focus permissible range as taught by Kurokawa et al. be a range where the imaging point of the subject by the lens taking system is within a depth of focus as taught by Kobayashi in order to prevent false in-focus determination as a result of using contrast values alone(Kobayashi column 10, lines 39-54).

8. Claims 3, 5, 8, 15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al. in view of Nonaka as applied to claims 1 and 16 above, and further in view of Doron(US 6,563,543).

Consider claim 3, and as applied to claim 1 above, Kurokawa et al. teach of an in-focus permissible range(see figure 51, claim 1 rationale). However, the combined teachings of Kurokawa et al. and Nonaka does not explicitly teach that the in-focus permissible range is a range where a subject is within a depth of field.

Doron is similar to Kurokawa et al. in that Doron teaches of a camera(see figure 1) with a focusing apparatus(28, 26, figure 1, column 3, lines 6-60). Doran is similar to Nonaka in that Doron teaches of a of a dual-press shutter button(see figures 3 and 4).

However, in addition to the teachings of Kurokawa et al. and Nonaka, Doron teaches that the in-focus permissible range is a range where a subject is within a depth of field(see figures 6 and 7, column 6, lines 27-59).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the in-focus permissible range taught by Kurokawa et al. correspond to a range where a subject is within a depth of field as taught by Doron for the benefit of decreasing the amount of time needed to capture images by simplifying the auto-focus process(Doron, column 5, lines 60-67).

Consider claim 5, and as applied to claim 1 above, Kurokawa et al. do not explicitly teach a shooting preparation start instruction. Nonaka teaches a shooting preparation start instruction(S11, figure 4, see claim 1 rationale).

However, the combination of the Kurokawa et al. and Nonaka does not explicitly teach that said controller(4) performs a focus control before the acceptance of said shooting preparation start instruction.

Doron is similar to Kurokawa et al. in that Doron teaches of a camera(see figure 1) with a focusing apparatus(28, 26, figure 1, column 3, lines 6-60). Doran is similar to Nonaka in that Doron teaches of a of a dual-press shutter button(see figures 3 and 4).

However, in addition to the combined teachings of Kurokawa et al. and Nonaka, Doron teaches that a controller performs a focus control before the acceptance of said shooting preparation start instruction(See steps 120-126, figure 3 and steps 214-222, figure 4. Focus control is performed before the full press of the shutter button(steps 124 and 221). This is opposed to performing focus control after the activation of a second release button as taught by Nonaka in steps S11 and S15, figure 4.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to perform focus control before the acceptance of a shooting preparation start instruction as taught by Doron in the camera taught by the combination of Kurokawa et al. for the benefit of decreasing the amount of time needed between the activation of a second release button and actual image capture due to performing the focusing operations beforehand(Doron, column 2, lines 1-8, column 5, lines 60-67).

Consider claim 8, and as applied to claim 1 above, the combination of Kurokawa et al. and Nonaka does not explicitly teach that said controller changes a value of an aperture without driving the lens system when the current position of the taking lens system is not within said in-focus permissible range so that the current position of the taking lens system is within said in-focus permissible range, and then starts shooting.

Doron is similar to Kurokawa et al. in that Doron teaches of a camera(see figure 1) with a focusing apparatus(28, 26, figure 1, column 3, lines 6-60). Doran is similar to Nonaka in that Doron teaches of a of a dual-press shutter button(see figures 3 and 4).

However, in addition to the combined teachings of Kurokawa et al. and Nonaka, Doron teaches that a controller changes a value of an aperture without driving the lens system when the current position of the taking lens system is not within said in-focus permissible range so that the current position of the taking lens system is within said in-focus permissible range, and then starts shooting(Doron teaches of a fixed-focus mode in which the aperture value is set to different values in order to broaden the depth of field, and thus bring an object which is outside the in-focus permissible range(such as a close range object) into the in-focus permissible range, column 6, lines 27-59.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to change the aperture value of the lens system taught by the combination of Kurokawa et al. and Nonaka in order to position the lens system in an in-focus permissible range as taught by Doron for the benefit of decreasing the amount of time needed to capture images by simplifying the auto-focus process(Doron, column 5, lines 60-67).

Consider claim 15, and as applied to claim 4 above, Kurokawa et al. teaches of an in-focus permissible range(see claim 1 rationale) and of setting submodes(see claim 4 rationale). However, Kurokawa et al. do not explicitly teach of a setting portion that sets a degree of quickness.

Nonaka teaches of the importance of setting a degree of quickness based on the current photographing condition(paragraph 0055), but does not teach of a setting portion for setting the degree of quickness.

Doron is similar to Kurokawa et al. in that Doron teaches of a camera(see figure 1) with a focusing apparatus(28, 26, figure 1, column 3, lines 6-60). Doran is similar to Nonaka in that Doron teaches of a of a dual-press shutter button(see figures 3 and 4).

However, in addition to the combined teachings of Kurokawa et al. and Nonaka, Doron teaches of a setting portion for setting a degree of quickness(Doron teaches of a fixed focus section(26, figure 1) and an auto-focus section(28, figure 1). The camera can be set in a fixed focus mode, or an auto-focus mode(column 3, lines 6-49) by a setting portion(switch, 31, column 4, lines 26-38). The degree of quickness then depends on which mode is chosen, with the fixed focus mode having a higher degree of quickness(column 6, lines 60-67). The in-focus permissible range is changed because in the fixed focus mode, a depth of field is set corresponding to different aperture values, said depth of field in correlation with an in-focus permissible range, column 6, lines 27-59.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include a setting portion for setting a degree of quickness, and thus changing an in-focus permissible range as taught by Doron while in the predetermined submode of the camera taught by the combination of Kurokawa et al. and Nonaka for the benefit of not missing a shutter chance(Nonaka, paragraph 0055) and being able to tailor the camera depending of whether a close, sharp image or a minimal time delay between shutter press and actual image capture is most important in the current photography setting(Doran, column 6, lines 60-67).

Consider claim 18, and as applied to claim 16 above, Kurokawa et al. teach of an in-focus permissible range(see figure 51, claim 1 rationale). However, the combined teachings of Kurokawa et al. and Nonaka does not explicitly teach that the in-focus permissible range is a range where a subject is within a depth of field.

Doron is similar to Kurokawa et al. in that Doron teaches of a camera(see figure 1) with a focusing apparatus(28, 26, figure 1, column 3, lines 6-60). Doran is similar to Nonaka in that Doron teaches of a of a dual-press shutter button(see figures 3 and 4).

However, in addition to the teachings of Kurokawa et al. and Nonaka, Doron teaches that the in-focus permissible range is a range where a subject is within a depth of field(see figures 6 and 7, column 6, lines 27-59).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the in-focus permissible range taught by Kurokawa et al. correspond to a range where a subject is within a depth of field as taught by Doron for the benefit of decreasing the amount of time needed to capture images by simplifying the auto-focus process(Doron, column 5, lines 60-67).

Consider claim 19, and as applied to claim 16 above, Kurokawa et al. do not explicitly teach a shooting preparation start instruction. Nonaka teaches a shooting preparation start instruction(S11, figure 4, see claim 16 rationale).

However, the combination of the Kurokawa et al. and Nonaka does not explicitly teach that said controller(4a) performs a focus control before the acceptance of said shooting preparation start instruction.

Doron is similar to Kurokawa et al. in that Doron teaches of a camera(see figure 1) with a focusing apparatus(28, 26, figure 1, column 3, lines 6-60). Doran is similar to Nonaka in that Doron teaches of a of a dual-press shutter button(see figures 3 and 4).

However, in addition to the combined teachings of Kurokawa et al. and Nonaka, Doron teaches that a controller performs a focus control before the acceptance of said shooting preparation start instruction(See steps 120-126, figure 3 and steps 214-222, figure 4. Focus control is performed before the full press of the shutter button(steps 124 and 221). This is opposed to performing focus control after the activation of a second release button as taught by Nonaka in steps S11 and S15, figure 4.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to perform focus control before the acceptance of a shooting preparation start instruction as taught by Doron in the camera taught by the combination of Kurokawa et al. for the benefit of decreasing the amount of time needed between the activation of a second release button and actual image capture due to performing the focusing operations beforehand(Doron, column 2, lines 1-8, column 5, lines 60-67).

9. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al. in view of Nonaka as applied to claim 1 above, and further in view of Kao et al.(US 6,774,943).

Consider claim 9, and as applied to claim 1 above, Kurokawa et al. do not explicitly teach that said controller starts shooting even when the current position of the taking lens system is not within said in-focus permissible range.

Nonaka teaches that shooting is started even when the current position of the taking lens system is not within said in-focus permissible range(paragraph 0055).

However, the combination of Kurokawa et al. and Nonaka does not explicitly teach of performing edge enhancement.

Kao et al. is similar to Kurokawa et al. in that Kao et al. teach of a camera containing an image capturing element(CCD, figure 5) and a lens to focus the image(column 3, lines 5-28).

However, in addition to the teachings of Kurokawa et al. and Nonaka, Kao et al. teach of an edge enhancement portion(58, figure 4, figure 6) that performs edge enhancement on a captured image(column 5, line 37 through column 6, line 56).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include an edge enhancement portion as taught by Kao et al. in the camera taught by the combination of Kurokawa et al. and Nonaka for the benefit of increasing the sharpness of the output image and providing users with a better viewing experience(Kao et al., column 1, lines 30-38).

Consider claim 10, and as applied to claim 1 above, Kurokawa et al. do not explicitly teach that said controller starts shooting even when the current position of the taking lens system is not within said in-focus permissible range.

Nonaka teaches that shooting is started even when the current position of the taking lens system is not within said in-focus permissible range(paragraph 0055).

However, the combination of Kurokawa et al. and Nonaka does not explicitly teach a pixel number conversion portion that changes the number of recording pixels so that the current position of the taking lens system is within said in-focus permissible range.

Kao et al. is similar to Kurokawa et al. in that Kao et al. teach of a camera containing an image capturing element(CCD, figure 5) and a lens to focus the image(column 3, lines 5-28).

However, in addition to the teachings of Kurokawa et al. and Nonaka, Kao et al. teach a pixel number conversion portion that changes the number of recording pixels(See column 5, lines 18-36, figures 3A-3D. Kao et al. teach that the number of pixels read out and recorded from the imaging array can be changed.). Because the degree of sharpness of the image formed by the pixels read out from the imaging element is used to determine whether or not the lens system is in an in-focus permissible range as taught by Kurokawa et al.(column 24, line 65 through column 25, line 27), and the pixel number conversion is performed by selectively reading out different pixels from the imaging element as taught by Kao et al.(column 5, lines 31-36), the in-focus permissible range taught by Kurokawa et al. can be determined based on which pixels are read out as taught by Kao et al.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include a pixel number conversion portion as taught by

Kao et al. in the camera taught by the combination of Kurokawa et al. and Nonaka for the benefit of decreasing the amount of total memory required, and thus decreasing the cost(Kao et al., column 5, lines 32-36).

Consider claim 11, and as applied to claim 10 above, the combination of Kurokawa et al. and Nonaka does not explicitly teach said pixel number conversion portion reduces the number of recording pixels.

However, Kao et al. teach that said pixel number conversion portion reduces the number of recording pixels(column 5, lines 18-36, figures 3A-3D).

Consider claim 12, and as applied to claim 10 above, the combination of Kurokawa et al. and Nonaka does not explicitly teach said pixel number conversion portion sets the number of recording pixels so that the current position of the taking lens system is within said in-focus permissible range.

However, in addition to the teachings of Kurokawa et al. and Nonaka, Kao et al. teach said pixel number conversion portion sets the number of recording pixels so that the current position of the taking lens system is within said in-focus permissible range(See column 5, lines 18-36, figures 3A-3D. Kao et al. teach that the number of pixels read out and recorded from the imaging array can be changed.). Because the degree of sharpness of the image formed by the pixels read out from the imaging element is used to determine whether or not the lens system is in an in-focus permissible range as taught by Kurokawa et al.(column 24, line 65 through column 25,

line 27), and the pixel number conversion is performed by selectively reading out different pixels from the imaging element as taught by Kao et al.(column 5, lines 31-36), the in-focus permissible range taught by Kurokawa et al. can be determined based on which pixels are read out as taught by Kao et al. Due to the fact that the in-focus permissible range taught by Kurokawa et al. is based on the readout of the pixels from the image sensor, the in-focus permissible range will differ, regardless of the position of the taking lens system, based on which pixels are read out.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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